

What is claimed is:

- 1 1. A voltage amplification circuit comprising:
2 a first inverting amplifier placed in a first stage;
3 a second inverting amplifier placed in a second stage, said
4 second inverting amplifier being DC-coupled to said first
5 inverting amplifier; and
6 wherein an amplifying operation starting input voltage in
7 said first inverting amplifier is set to be lower than an
8 amplifying operation starting input voltage in said second
9 inverting amplifier.

- 1 2. The voltage amplification circuit according to Claim 1,
2 further comprising a clamping circuit to feed a clamping voltage
3 to an input terminal for said first inverting amplifier and
4 wherein a transistor placed on a load side making up said clamping
5 circuit has substantially a same threshold value as a driver
6 transistor in said second inverting amplifier.

- 1 3. A voltage amplification circuit comprising:
2 a first inverting amplifier placed in a first stage;
3 a second inverting amplifier placed in a second stage, said
4 second inverting amplifier being DC-coupled to said first
5 inverting amplifier;
6 wherein said first inverting amplifier comprises a first
7 transistor with a drain and a gate of which are both connected
8 to a terminal for a first potential and a second transistor with
9 a gate of which is connected to an input node and with a source
10 of which is connected to a terminal for a second potential, in

11 which a source of said first transistor is connected to a drain
12 of said second transistor, an output of said first inverting
13 amplifier being placed between said source of said first
14 transistor and said drain of said second transistor;

15 wherein a second inverting amplifier comprises a third
16 transistor with a drain and gate of which is connected to a terminal
17 for said first potential and a fourth transistor with a gate of
18 which is connected to a terminal for an output from said first
19 inverting amplifier and with a source of which is connected to
20 a terminal for said second potential, in which a source of said
21 third transistor is connected to a drain of said fourth transistor,
22 an output of said second inverting amplifier being placed between
23 said source of said third transistor and said drain of said fourth
24 transistor; and

25 wherein a threshold value of said fourth transistor is
26 larger than a threshold value of said second transistor.

1 4. The voltage amplification circuit according to Claim 3,
2 further comprising a clamping circuit to output a clamping voltage
3 to a clamping node which has sixth and eighth transistors with
4 drains and gates of which are connected commonly to a terminal
5 for said first potential and seventh and ninth transistors with
6 drains and gates of which are connected to sources of said sixth
7 and eighth transistors and with sources of which are connected
8 commonly to a terminal for said second potential and wherein said
9 sources of said sixth and eighth transistors and said gates and
10 said drains of said seventh and ninth transistors are connected
11 to said clamp node and wherein said clamping circuit further has
12 a fifth transistor with a gate of which is connected to a control

13 signal terminal and with a drain or with a source of which is
14 connected to an input node of said first inverting amplifier and
15 with a source or with a drain of which is connected to said clamping
16 node and wherein threshold values of said fourth and eighth
17 transistors are substantially same.

1 5. The voltage amplification circuit according to Claim 3,
2 wherein a non-inverting amplifier is added which has a tenth
3 transistor with a drain of which is connected to a terminal for
4 said first potential and with a gate of which is connected to an
5 output terminal for said second inverting amplifier and an
6 eleventh transistor with a gate of which is connected to an output
7 terminal for said first inverting amplifier and with a source of
8 which is connected to a terminal for said second potential and
9 wherein a source of said tenth transistor is connected to a drain
10 of said eleventh transistor and a voltage is output therefrom.

1 6. The voltage amplification circuit according to Claim 3,
2 wherein a transistor for controlling supply of a source voltage
3 is connected to a connecting point to a terminal for said first
4 potential wherein, while a control signal is active, said first
5 potential is applied to said clamping circuit and while said
6 control signal is inactive, said first potential is applied to
7 an amplifying section.

1 7. The voltage amplification circuit according to Claim 4,
2 wherein a non-inverting amplifier is added which has a tenth
3 transistor with a drain of which is connected to a terminal for
4 said first potential and with a gate of which is connected to an

5 output terminal for said second inverting amplifier and an
6 eleventh transistor with a gate of which is connected to an output
7 terminal for said first inverting amplifier and with a source of
8 which is connected to a terminal for said second potential and
9 wherein a source of said tenth transistor is connected to a drain
10 of said eleventh transistor and a voltage is output therefrom.

1 8. The voltage amplification circuit according to Claim 4,
2 wherein a transistor for controlling supply of a source voltage
3 is connected to a connecting point to a terminal for said first
4 potential wherein, while a control signal is active, said first
5 potential is applied to said clamping circuit and while said
6 control signal is inactive, said first potential is applied to
7 an amplifying section.

1 9. The voltage amplification circuit according to Claim 5,
2 wherein a transistor for controlling supply of a source voltage
3 is connected to a connecting point to a terminal for said first
4 potential wherein, while a control signal is active, said first
5 potential is applied to said clamping circuit and while said
6 control signal is inactive, said first potential is applied to
7 an amplifying section.